WHAT IS CLAIMED IS:

1. A composition formulated for oral administration to humans, the composition comprising:

a recombinant bacterium, wherein the recombinant bacterium constitutively expresses an expression product encoded by a heterologous nucleic acid sequence operatively linked with a flagellin gene promoter,

wherein the expression product is an aldehyde dehydrogenase (ALDH) enzyme that oxidizes acetaldehyde to acetate,

wherein the recombinant bacterium is present in the composition in an amount sufficient that, when the composition is orally administered to a human, it metabolizes acetaldehyde in the presence of alcohol.

2. The composition of claim 1, wherein the recombinant bacterium does not express an alcohol dehydrogenase.

3. The composition of claim 1, wherein the ALDH is the only enzyme encoded by a heterologous nucleic acid sequence in the recombinant bacterium.

4. The composition of claim 1, wherein the bacterium is a probiotic bacterium.

5. The composition of claim 1, wherein the bacterium is of a genus selected from *Bacillus, Bifidobacterium, Enterococcus, Escherichia, Lactobacillus, Lactococcus, Leuconostoc, Pediococcus,* and *Streptococcus.*

6. The composition of claim 1, wherein the bacterium is of the genus *Bacillus.*

7. The composition of claim 1, wherein the bacterium is of the species *B. subtilis.*

8. The composition of claim 1, wherein the bacterium is a spore-forming bacterium.

9. The composition of claim 8, wherein the bacterium is in a spore form.

10. The composition of claim 1, wherein the composition comprises about 10^4 to about 10^{12} colony forming units of the recombinant bacterium.

11. The composition of claim 1, wherein the recombinant bacterium is present as a bacterial cell culture in the composition.

12. The composition of claim 1,

wherein the flagellin gene promoter comprises a mutation in a CsrA binding site,

wherein the mutation in the CsrA binding site inhibits binding of CsrA to mRNA transcripts encoding the ALDH enzyme but does not preclude expression of the ALDH enzyme, and

wherein the recombinant bacterium comprises a mutation of an endogenous *flgM* gene that reduces inhibition of a sigma factor.

13. The composition of claim 12, which composition comprises a preparation of the recombinant bacterium characterized in that the expression product is expressed in the preparation at a level determined to be at least about 4 times greater than that observed under comparable conditions when the expression product is expressed under control of a pHyspank promoter.

14. The composition of claim 12, wherein the flagellin gene promoter is a *B. subtilis hag* promoter.

15. The composition of claim 12, wherein the mutation in the CsrA binding site is a mutation in a *B. subtilis hag* promoter CsrA binding site selected from binding site 1 (BS1) and binding site 2 (BS2).

16. The composition of claim 12 wherein the sigma factor is SigD.

17. The composition of claim 1, wherein the composition comprises a physiologically acceptable carrier.

18. The composition of claim 17, wherein the physiologically acceptable carrier is selected from a lactic acid fermented food, fermented dairy product, resistant starch, dietary fiber, carbohydrate, protein, glycosylated protein, water, capsule filler, and gummy material.

19. The composition of claim 1, wherein metabolism of acetaldehyde in the presence of alcohol is detected as reduction in one or more effects of an alcohol hangover.

20. The composition of claim 19, wherein the one or more effects of an alcohol hangover are selected from the group consisting of dehydration, poor sleep, grogginess, nausea, vomiting, headache, malaise, dry mouth, sensitivity to light and sound, sweating, muscle pain, diarrhea, stomach pain, gastrointestinal distress, vertigo, anxiety, depression, irritability, elevated acetaldehyde concentration in the body, and combinations thereof.